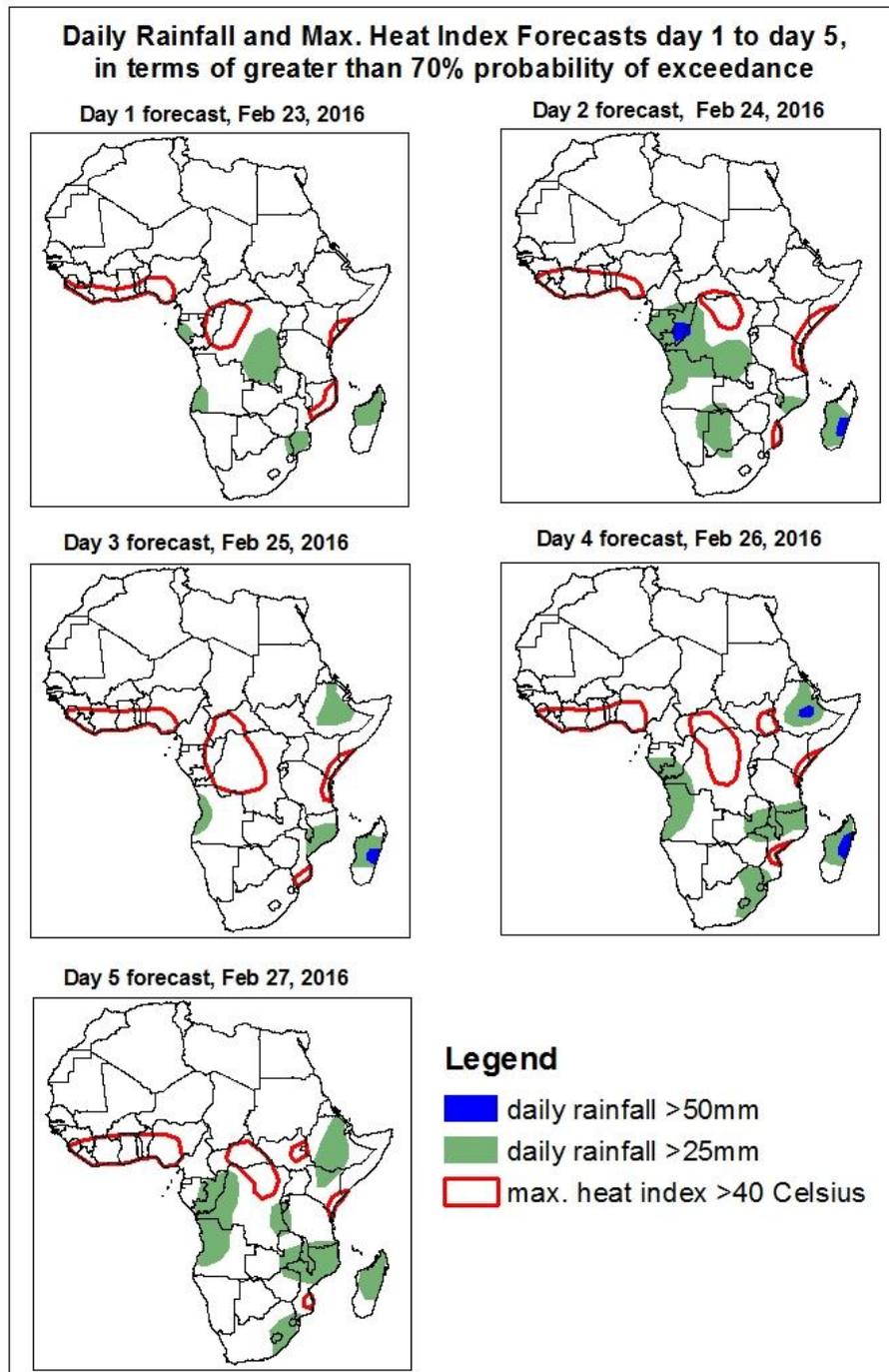


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

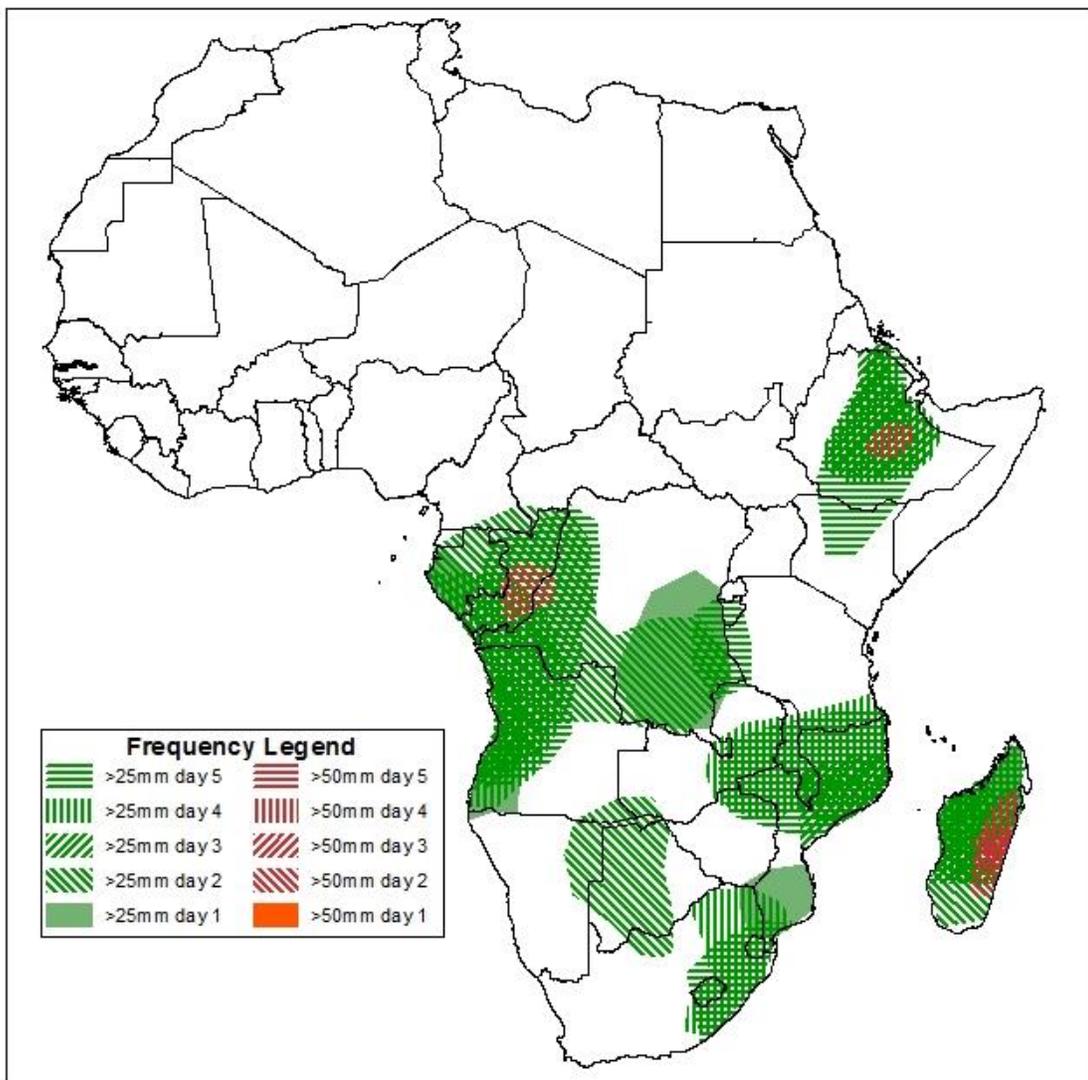
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 22, 2016)

### 1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Feb 23 – Feb 27, 2016)

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



## Five Days Rainfall Forecast Summary February 23 - 27 , 2016

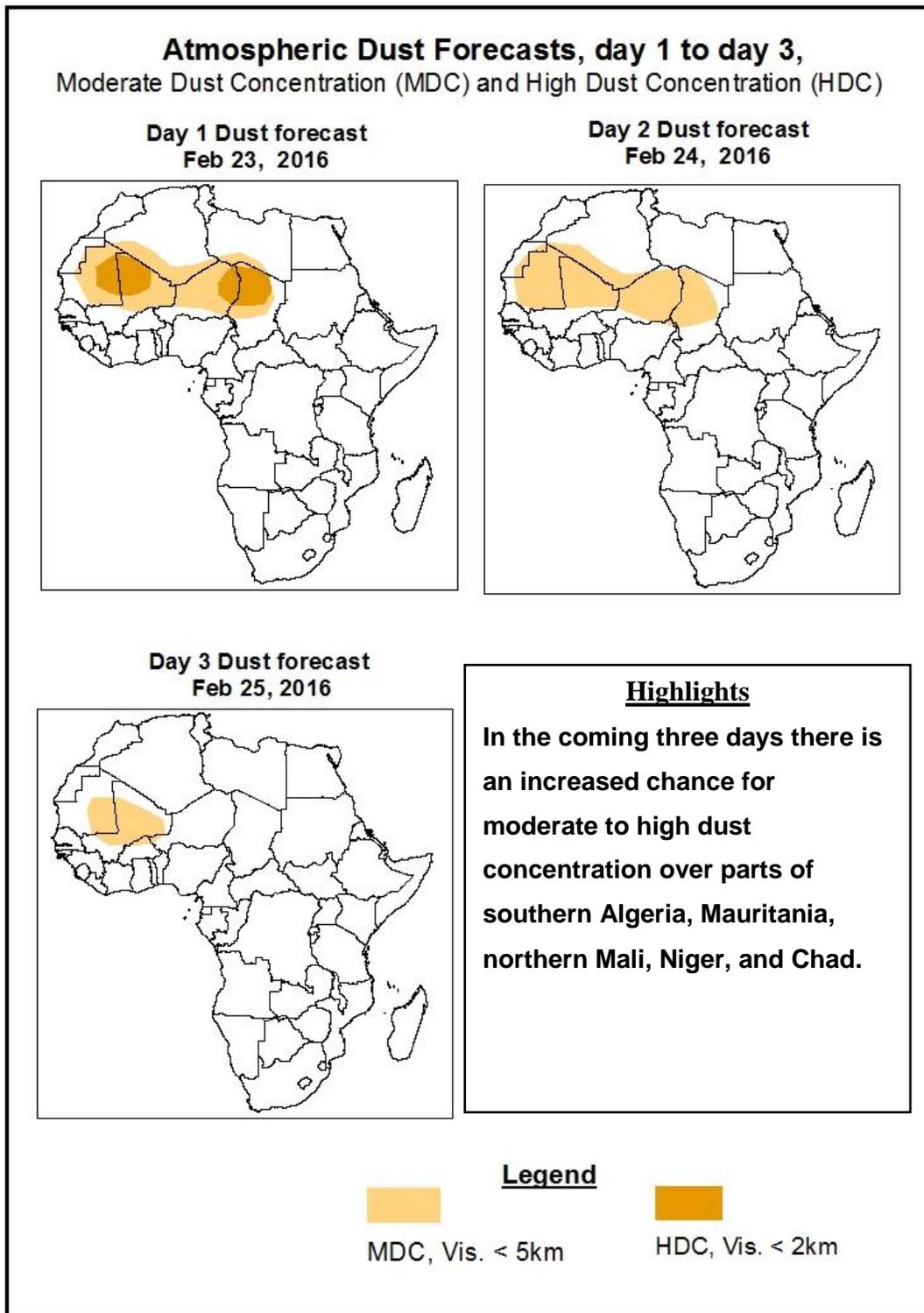


### Highlights

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Gabon, Congo-Brazzaville, parts of DRC, western and northern Angola, portions of Ethiopia, eastern Zambia, northern Mozambique, eastern South Africa, and Madagascar.

## 1.2. Atmospheric Dust Concentration Forecasts (valid: Feb 23 – Feb 25, 2016)

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



### **1.3. Model Discussion, Valid: Feb 23 – Feb 27, 2016**

The Azores high pressure system over Northeast Atlantic is expected to maintain an average central pressure value of 1032 hPa during the forecast period.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken, with its central pressure value decreasing from about 1024 hPa in 24 hours to 1019 hPa in 72 hours, and it tends to strengthen slightly towards end of the forecast period.

The Mascarene high pressure system over the Southwest Indian Ocean is expected to intensify gradually during the forecast period, with its central pressure value increasing from about 1020 hPa in 24 hours to 1025 hPa in 120 hours.

At 925 hPa level, strong dry northeasterly to easterly flow is expected to prevail across many places in the Sahel countries, leading to increased chance for moderate to high dust concentration in the area.

At 850 hPa level, a mid-latitude cyclonic circulation is expected to prevail across the northern portions of Arabian Peninsula, with its associated trough extending southwards into Ethiopia, leading to increased rainfall activity over Ethiopia during the forecast period. An area of cyclonic circulation and its associated trough is expected to prevail over the Mozambique Channel and the neighboring areas during the forecast period. Seasonal wind convergences are expected to enhance rainfall over portions of DRC, and Angola.

At 500 hPa level, a deep trough associated with mid-latitude cyclonic circulation is expected to prevail over the Arabian Peninsula and the neighboring areas during the forecast period.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Gabon, Congo-Brazzaville, parts of DRC, western and northern Angola, portions of Ethiopia, eastern Zambia, northern Mozambique, eastern South Africa, and Madagascar.

There is also an increased chance for maximum heat index values to exceed 40°C along the Gulf of Guinea coast, parts of central DRC, southern CAR, southern Mozambique portions of South Sudan Republic and portions of costal East Africa.

## 2.0. Previous and Current Day Weather over Africa

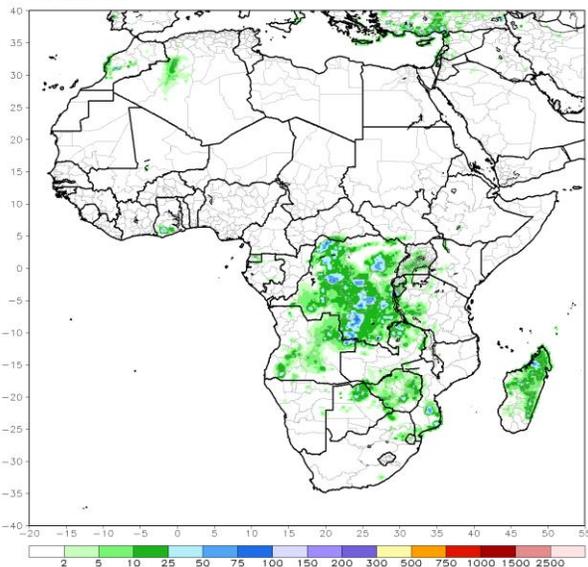
### 2.1. *Weather assessment for the previous day* (February 21, 2016)

Moderate to locally heavy rainfall was observed over portions of central DRC, eastern Madagascar, western Zambia and central Zimbabwe.

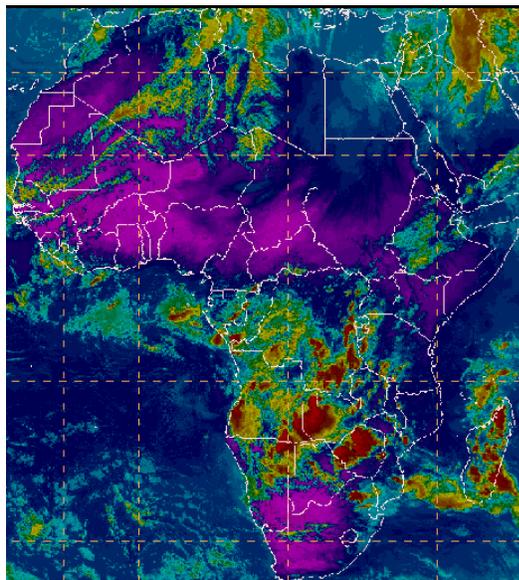
### 2.2. *Weather assessment for the current day* (February 22, 2016)

Intense convective clouds are observed across portions of south eastern Angola, southern DRC, north east Namibia, western Zimbabwe and eastern Madagascar.

RFE2 Daily Total Rainfall (mm)  
Period: 21Feb2016



IR Satellite Image (valid 1530z February 22, 2016)



*Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (right) based on IR Satellite image*

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